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(71)(72) Applicant and Inventor: VIGNUDELLI, Adriano [IT/IT]; Via San Vito, 6, I-41057 Spilamberto (IT).

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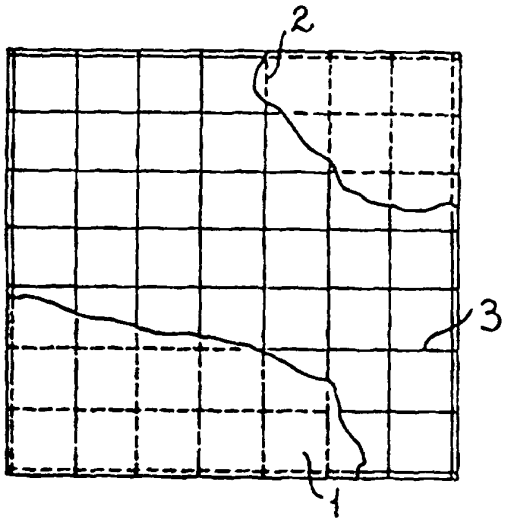
(54) Title: SHIELDING MATERIAL HAVING A RADIATION ANTISTRESS EFFECT

(57) Abstract

The base material can be obtained by means of the realisation, on a support made out of material or non material, of a system of two crossed orders, uniformly distributed, of rectilinear stitching carried out with a yarn having a metallic core inside. In this way, an incorporated shielding metallic screen made of metallic cores is obtained.



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SHIELDING MATERIAL HAVING A RADIATION ANTISTRESS EFFECT

BACKGROUND OF THE INVENTION

The present invention relates to a material that cannot be penetrated by forms of electromagnetic energy propagation, both in the form of waves and particles which are particularly light, flexible and thin which can be used in garments, for example incorporating it between the parts of the lining and the external of the garment, or for making suits for protecting the human body from radiation stress. The material can both be used generally and for specific use, for example for the protection of the personnel operating in radio stations, in X ray areas and on board submarines, and for the conventional use of electrical equipment such as irons, microwave ovens and the like. Said material can be produced in bobbins so as to make it possible to obtain the shapes to be worked by die cutting or other related processes. In order to obtain an antistress radiation material of a particular consistency, there is

provided an integrally operating unit meant for the stitching or for the welding lines, said unit being composed of two shielding parts between which is interposed a plate-like part acting as a structural element. Furthermore, using in the above mentioned composite version, a part of interposition with excellent heat insulating characteristics, which for example can be obtained from polyethylene plates which are suitably equipped with a uniform system distributed with holes so as to allow for the transpiration of the human body, a new kind of material is obtained with the characteristics which are similar to those already mentioned in terms of lightness, flexibility and thinness, thus resulting impenetrable to the forms of electromagnetic energy propagation and capable of simultaneously holding back the body heat according to pre-established values. In the prior art technique, in order to protect the human body from the forms of electromagnetic energy propagation which can be found in sender equipment, for example computers, cellular telephones, television systems, white goods and the lik , a metallic scre n is u d inside the bodies of aid equipment which,

operating as shielding barriers, prevents the propagation of the radiation to the outside. The above mentioned shielding system, as it provides for a positional impenetrability, it is not capable of preventing the exit to the outside of a considerable amount of radiation because of the presence of various parts or components which cannot be shielded; furthermore it doesn't provide for any protection for the personal who have to intervene on the conventional resetting operations and adjustment of the sending equipment. For these tasks, for power plant operators, transreceiver plant operators and the like, is envisaged a rigid structure, worn by the operator, with a shielding metallic screen incorporated on the inside. These are shielding means that are fundamentally meant for the use of particular tasks and whose weight and overall dimensions make them unfit for general use.

SUMMARY OF THE INVENTION

The present invention provides a solution to the ab v mentioned problems by making available

shielding material of a new kind made in sheets which are particularly light, flexible and thin supplied to the manufacturing industry in bobbins from which can be cut the shapes to be worked for the variety of designs. Substantially, the base material is obtained by means of the realisation, on a support made out of material or non material 1, of a system of two crossed orders, uniformly distributed, of rectilinear stitching carried out with a yarn 2 having a metallic core 3 inside. In this way, an incorporated shielding metallic screen made of metallic cores 3 is obtained. In order to obtain a product of particular consistency, a composite material is provided which is constituted by two supports 1 with a structural support 4 interposed the whole system being made operative and integral by means of a system of stitching, as already mentioned, with yarn 2, with a metallic core 3. By using in the composite material a structural support 4 with excellent insulating characteristics, such as polyurethane, and appropriately equipping it with a system of holes uniformly distributed, in order to p rmit the transpiration of the hum n body, a shielding material is obtained which is capable of

simultaneously holding the body heat according to pre-established values.

BRIEF DESCRIPTION OF THE DRAWINGS

Hereunder is illustrated, in the form of a a non-limiting example, a preferred embodiment with the aid of the accompanying drawings in which:

-fig 1 is an exploded view of the two types of sheet support provided for obtaining the composite material in order;

-fig 2 is, a side view of the composite material, already completed by means of realisation of the stitching system of crossed orders, said stitching being obtained with yarn 2 incorporating a metallic core 3;

-fig 3 is a view of the same square of material showing a view of a section of surface so as to observe the shielding screen formed by crossed lines of metallic cores 3;

-fig 4 is a hydrographic view of a material on the bobbin at the beginning of the unwinding for the cutting of the shapes to be worked.

Indicative forms of the field of us of the material in rder are shown as examples in

figures 5 and 6;

-fig 5 is a detailed view of the use of the material incorporated in a piece of clothing 5 worn by an operator in a plant where electronic equipment is used;

-fig 6 shows the use of a protective suit 6 worn by a person ironing blankets using an electric iron.

In the embodiments, the form and the typology, the materials and the like can vary in relation to the specific use.

WHAT IS CLAIMED

1. Shielding material having a radiation antistress effect wherein the base material is obtained by means of the realisation, on a support made out of material or non material, of a system of two crossed orders, uniformly distributed, of rectilinear stitching carried out with a yarn having a metallic core inside.

2. Shielding material having a radiation antistress effect as in claim 1, wherein in order to obtain a product of particular consistency, a composite material is provided which is constituted by two supports with a structural support interposed, the whole of the system being made operative and integral by means of a system of stitching, as already mentioned with yarn having a metallic core.

3. Shielding material having a radiation antistress effect as in claim 1, wherein by using in the composite material, a structural support with excell nt insulating characteristics, for example polyurethane, and appropriately equipping it with

a system of holes uniformly distributed, in order to permit the transpiration of the human body, a shielding material is obtained which is capable of simultaneously holding the body heat according to pre-established values.

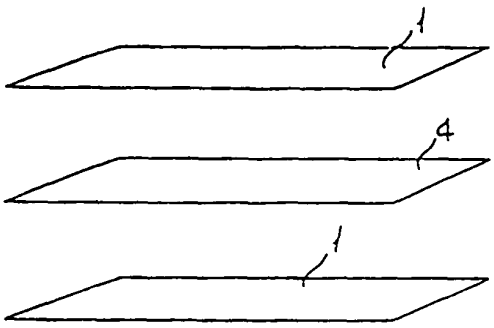

FIG. 1

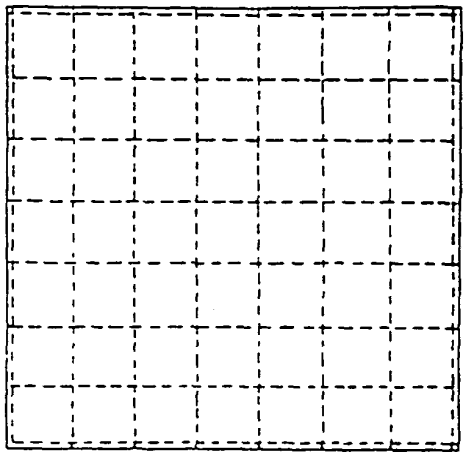

FIG. 2

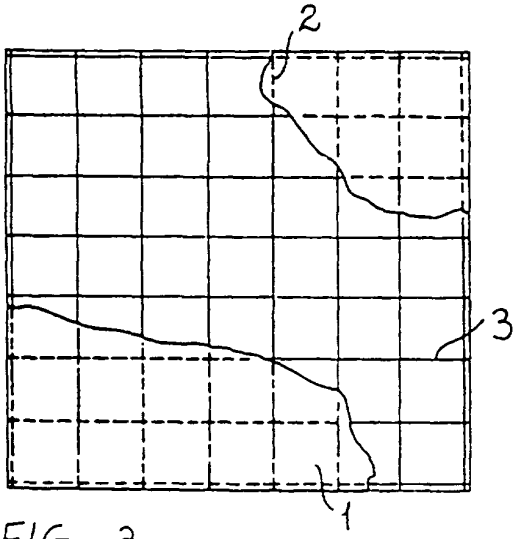

FIG. 3

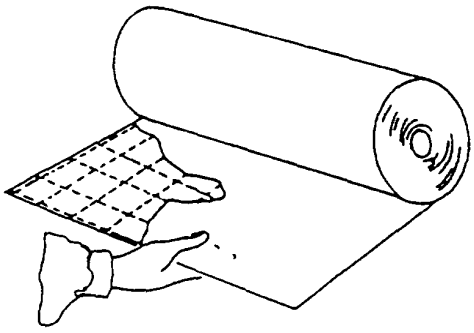

FIG. 4

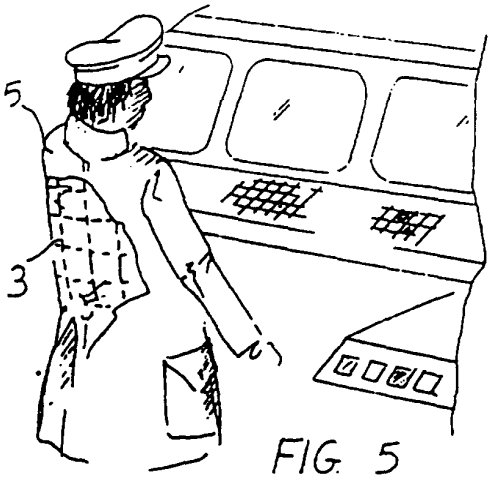

FIG. 5

FIG. 6

INTERNATIONAL SEARCH REPORT

Intern al Application No
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A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 G21F3/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 G21F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	PATENT ABSTRACTS OF JAPAN vol. 014, no. 147 (M-0952), 20 March 1990 & JP 02 011499 A (NEC CORP), 16 January 1990, see abstract	1,2
Y	WO 89 12706 A (NUKLEARE SICHERHEITS PROD ;TG TECHNO GARNE GMBH (DE)) 28 December 1989 see abstract see page 10, paragraph 3-4; figure 1	1,2
A		3
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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 073 648 A (TORAY INDUSTRIES) 9 March 1983 see abstract; claims 1,9,10; figure 1	1,2
A	US 2 858 410 A (RICH) 28 October 1958 see the whole document	1,2
A	DE 32 07 014 A (BOHN GERHARD) 8 September 1983 see abstract; claims 1,13,18	1-3

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Information on patent family members

International Application No
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